

VITA: A Human-Centered Approach to Reducing Health Disparities in Segregated Communities

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Abstract

Urban segregation exacerbates health disparities, particularly in emerging economies, leading to higher rates of infant mortality and chronic diseases. This article details the development of VITA, a digital platform designed to empower Community Health Agents (ACS) in segregated communities, enhance their efficiency, and improve key health outcomes. VITA prioritizes accessible technology, efficient workflows, and data-driven decision-making, focusing on a human-centered approach under the slogan: "Cuidando de quem mais precisa, onde mais importa" (Caring for those who need it most, where it matters most).

Keywords: Community Health, Health Disparities, Infant Mortality, Urban Segregation, Digital Health, Human-Centered Design, Community Health Agents (ACS).

1. Introduction

Segregated urban areas, especially in countries like Brazil, exhibit alarming health inequalities [1, see: editorarealize.com.br]. Factors such as inadequate housing, limited access to healthcare, and social vulnerabilities contribute to a cycle of poverty and disease. Community Health Agents (ACS) act as a vital link between these underserved populations and essential healthcare services. This paper presents VITA, a digital platform co-created to address the challenges faced by ACS, aiming to empower them through technology-driven solutions. It aligns with the edict's focus on addressing tangible issues with social urgency and incorporating technology [See: Summarized by AI - March 9, 2025].

2. Problem Definition: Segregation and its Impact on Health

Urban segregation results in fragmented growth, leading to urban spaces of low density and high cost for municipal management [1, see: editorarealize.com.br]. This spatial separation exacerbates social and economic inequalities, leading to health disparities [2, see: mundoeducacao.uol.com.br]:

2.1. Housing and Infrastructure: Limited access to basic sanitation and inadequate infrastructure increases exposure to health risks and diseases.

2.2. Healthcare Access: Segregated areas experience limited access to healthcare services, impacting timely access to prenatal care, vaccinations, and chronic disease management [PMC9550534, see: ncbi.nlm.nih.gov].

2.3. Socioeconomic Vulnerabilities: Increased social vulnerability within segregated areas perpetuates a cycle of poverty and inequality [See: mundoeducacao.uol.com.br], resulting in adverse health outcomes for marginalized communities.

The root causes encompass a wide array of factors, and the impact is considerable [Ideas.repec, see: ideas.repec.org].

3. The Role of Community Health Agents (ACS)

ACS act as critical links within these communities by providing access and support [PMC9550534, see: ncbi.nlm.nih.gov]. They perform functions such as:

3.1. Building Trust: ACS foster trust within communities through regular home visits and personalized support, especially in regions needing greater social assistance, such as Northeast Brazil [See: gov.br].

3.2. Health Promotion: They orient families on practices of disease prevention and encourage engagement in community-driven health solutions.

3.3. Early Intervention: ACS identify health risks early, including malnutrition and exposure to violence, facilitating timely intervention, particularly crucial in vulnerable demographic areas.

However, ACS face difficulties [Editorarealize, see: editorarealize.com.br] stemming from:

3.4. Lack of Recognition: ACS often experience a lack of both acknowledgment and appreciation for their roles, reducing their work satisfaction.

3.5. Limited Resources: Insufficient tools and resources, with initial training not being enough for the job, affects the delivery of community health services.

4. VITA: Empowering ACS through Technology

VITA is designed to address these challenges with a focus on sustainability and transparency. Its key features and functionalities address these critical necessities.

4.1. Core Functionalities:

4.1.1. Prioritized Visit Scheduling: Algorithm-driven prioritization ensures those at greatest need receive prompt attention. Inspired by successful data-capturing techniques and risk-scoring [See: Briefing I, Summarized with AI - March 9, 2025].

4.1.2. Enhanced Digital Questionnaires: Localized questionnaires designed for data-driven collection to capture key indicators, facilitating AI algorithm generation.

4.1.3. Team communication: Direct channels and systems for ACS can engage and help with local needs.

4.1.4. Easy-to-Use Registration: Easy-to-use registration systems.

4.2. Key Technical Features:

4.2.1. Offline Functionality: An offline mode allows ACS to perform core tasks in low-connectivity areas and sync data when available.

4.2.2. Data Security: VITA includes mechanisms to ensure data privacy, ensuring the security of patient details.

5. Expected Impact

VITA seeks to create measurable societal impacts and provide key information for healthcare professionals [Summarized with AI - March 9, 2025]. Such impacts include:

5.1. Reduced Infant Mortality: VITA focuses on ensuring timely prenatal and postnatal care, contributing to decreased infant mortality rates, aligning with sustainable solutions [See: summitmobilidade.estadao.com.br].

5.2. Improved Disease Management: Optimized monitoring capabilities enhance ACS's abilities to manage conditions more effectively.

5.3 Enhanced ACS Capabilities: Better organization will allow them to be more efficient, especially for high-violence areas or zones with limited access.

6. Conclusion

VITA is a technologically sustainable effort focused on ACS needs, bringing a promise to children and families in society [Jurados, see: summitmobilidade.estadao.com.br]. It empowers them with easy tools, such as systems for better communication, which also

promote visibility and recognition of results. Future enhancements are to focus on ease and scalability, while respecting security and human-centricity.

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8. References

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